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IMPLEMENTING DANSEREAU'S MURDER TECHNIQUE TO TEACH
LEARNING DISABLED STUDENTS

A graduate project submitted in partial fulfillment of
the requirements for the degree of

MASTER OF EDUCATION

to the faculty of the department of

EDUCATION

at

Lynn University

Boca Raton, Florida

by

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Abstract

High School learning disabled students were taught prefix and suffix meanings from an adaption of Donald Dansereau's MURDER strategy in cooperative learning groups. Two groups participated in a two week long study, with only one group using the MURDER strategy. The results were measured with posttest scores in a Pearson product moment correlation matrix and indicated that there was no correlation between using the MURDER strategy and being taught with standardized worksheets. However, students who were engaged in the MURDER technique, scored higher on their posttests than those who did not. In addition, the students scored higher between pretests and posttests after learning the strategy.

Implementing Dansereau's Murder Technique
to Teach Learning Disabled Students
Prefixes and Suffixes

Upon entering high school, students will be required to study more than ever before to utilize skills. They will spend more time preparing for completing complex tests, research papers, and vast projects. Consequently, students should have been taught certain study skills in order to complete such intricate assignments.

One major concern among special education teachers is teaching special education students to comprehend newly learned material and add it to their framework of knowledge. Many instructors still encourage rote memorization by specifying exactly what must be learned, rewarding verbatim answers on tests, and putting little emphasis on the development of relationships between current learning and what has already been learned (Dansereau, 1987).

Donald F. Dansereau is a cognitive theorist whose primary interest includes teaching cooperative learning techniques in academic and technical settings.

Dansereau's strategies stem from cognitive theorists such as Jean Piaget (1977) and Lev Vygotsky (1978) who are concerned with how humans store and process what they learn and, how they interact with others (Jacobs, 1990).

One of Dansereau's learning strategies, known as MURDER, developed in 1979, was designed primarily as a study method to aid college students in comprehending material

rather than strictly memorizing material that may seem insignificant to them.

MURDER is a technique developed for use in cooperative teaching where students are encouraged to read different material and take turns teaching the material to one another, or in cooperative learning groups where students read the same material and discuss what they have learned. Dansereau encourages both types of cooperative groups because cooperative learning teaching leads to better initial learning. Additionally, cooperative learning leads to a better transfer to individual studying. Dansereau also feels that both cooperative methods promote cognitive activities such as oral summarization, metacognition (knowing how to learn), and elaboration, which are all important to academic learning (Dansereau, 1987).

It is my goal to determine if Dansereau's MURDER strategy can be modified and utilized in a tenth grade Exceptional Student Education English class in Martin County, Florida. The technique will be designed for a prefix/suffix lesson that will be taught over a period of five days. One class will be taught from the MURDER strategy and the other class will be given standard worksheets. My hypothesis is that the students who are taught from the MURDER strategy will score higher on the final test than the students who are given worksheets. Furthermore, this project will demonstrate that cooperative learning is also beneficial to the learning environment

rather than individualized instruction. The principles of the MURDER technique are displayed in Table 1.

The first concept of MURDER, setting the mood to study and learn, can be achieved by a variety of ways one of which would begin with a motivational or "attention-getting" activity (Salend, 1994). The mood concept, according to O'Neil, Anderson, and Freeman, (1979), was derived from the work of Meichenbaum and Goodman (1971) on positive self-talk and Ellis (1973) on Rational Behavior Therapy.

The second component, read for understanding, in which the student identifies the relevant section(s) of the reading material they comprehend with no pressure of memorizing details, stems from the metacognitive approach (O'Neal et al., 1979). In this component, the student should also identify details that they do not understand from the reading.

The third component is recalling important facts. In this concept, the student gives a summary of the material read by using specific strategies such as paraphrasing, identifying key ideas, and note taking. Recall is the most vital step because it fosters the transformation and the reorganization of the information presented into a more personalized and useful form (Dansereau, 1987).

The fourth component, digesting newly learned information, allows the student to further expand his or her knowledge by determining what is important and what needs further examination for greater understanding.

Table 1

The Principles of Dansereau's Murder Strategy

1. Setting the Mood to study and learn.
 2. Read for Understanding.
 3. Recall relevant information without referring to material read.
 4. Digest information by using other resources to clear up misunderstood information.
 5. Expand knowledge by understanding how material can be applied.
 6. Review material and focus on information not learned well.
-

Note. From "Technical Learning Strategies," by D.F.

Dansereau, 1987, Engineering Education, 77, p. 281.

The fifth component, expanding on the new knowledge, actually allows the student to use outside resources, such as other books, pictures, films, etc., to further understand the material.

The last component, reviewing the new information, tests the student on the material and determines if his or her study techniques are successful, should be used again, or should a different approach be applied.

According to Lefrancois (1991), although this model is somewhat complex, studies of this program at the college level have been successful in increased cognitive functioning. This may benefit students who lack certain study skills, such as managing their schedules, prioritizing social and academic demands, and the inability to select important material from their studies (Areson & DeCaro, 1984).

Other advantages of performing the MURDER strategy allow the student to focus on main ideas and process information more efficiently rather than remembering every detail (Jacobs, 1990).

However, Dansereau (1987) has noted failure in using this technique when one or more of the participants is excessively passive or when the activity is too detailed and explicit and suggests cooperative learning among the students who can be flexible in order to alter their roles to their own strengths.

Although the MURDER technique was utilized mainly with college-level students, this method can be applied to children of all ages from pre-school to high school. In order to gear this method to lower grades, minor adaptations must be conducted to make it relevant to the younger child's learning process.

For example, a fourth grade science class is reading about the rain forest. Although this concept may be complex and new to the children, they can understand the material when applying the MURDER method as follows:

1. Set the mood by creating a bulletin board full of colorful pictures of what the rain forest looks like.
2. Have the children read the story for understanding and then write down all information they think is important about rain forests. Then, at the same time, have them write down words and concepts that they don't understand. For instance, assume some children have difficulty understanding the levels of the forest, i.e. canopy, understory, and ground. These three levels may be written down so children will later determine their meaning.
3. Next, place the children in cooperative learning groups and have them each recall relevant information without looking back at the reading material. Assign one student in each group as the recorder to write down all important information that the group agrees on.

4. Afterwards, the students should be able to digest misconceived material by introducing supplemental information, such as visual displays on the bulletin board, books, films, etc., or take the class to the library so the students can browse through information in order to find answers to the misunderstood material. Students can work in groups in order to help one another. In this case, some children will find more information on the levels of the rain forest.

5. Next, allow children to expand on new information by having each group prepare a project in order to apply and ask questions about the newly learned information as they begin to go beyond reading material.

6. Finally, review the material by playing a game, giving each group a worksheet or test, or use an alternative method of assessment to determine the student's level of understanding. Remember to focus on information that students found hard to understand.

Murder can be applied to any subject: science, mathematics, social studies, foreign language, etc. It is a method that can be used in groups (as in the example above), or individually. It can also be modified to fit simulation games, theme units, or just about any activity. This method is also appropriate for special education classrooms or for children who have great difficulty remembering reading material on which they will be tested.

As an educator, I think it is also important to remember that when using a teaching strategy, such as MURDER, teachers should create an environment that aids in the understanding of material by conducting a hands-on experience for students. In other words, make learning enjoyable by generating activities that will promote comprehension rather than the same day-to-day direct instruction that many students find boring.

At first, Dansereau's MURDER strategy appeared somewhat complex, but when modifying it to be utilized for grade school, the strategy seemed simple and effective. I believe that this strategy can be useful in aiding children to understand reading material and thus, process the information for higher learning.

As Dansereau stated: "Understanding and applying information is far more important than just remembering it in many job situations." (1987, p. 280). It is essential that educators prepare students to learn comprehension so that they can be independent, critical thinkers. If this is a common goal for every teacher in the classroom, at every grade level, children would develop skills that would better prepare them for college and/or a successful career.

HISTORY OF COOPERATIVE LEARNING

Since the enactment of PL 94-142, special education students must receive their individualized education in the least restrictive environment. Therefore, many mildly handicapped students are being mainstreamed into regular classrooms with non-handicapped children or in classrooms with students of varying exceptionalities. One major challenge educators face is meeting the diverse needs of all students in the classroom while, at the same time, engaging in high quality meaningful activities. How can teachers educate children of diverse abilities so that the higher ability students are not constantly waiting for their less capable peers and the lower ability students are able to complete the assignments?

One teaching method educators are encouraged to employ is the utilization of cooperative learning groups within the classroom. Cooperation is working together to accomplish shared goals, and cooperative learning is the instructional use of small groups so that students work together to maximize learning (Johnson & Johnson, 1989). Two of the earliest pioneers of cooperative learning were Johnson and Johnson. The brothers both joined the faculty at the University of Minnesota in 1969 and combined their expertise on social psychology, cooperative learning, and classroom instruction and have reviewed and modified existing models of cooperative learning techniques so educators can employ them in the classroom.

How effective are cooperative learning groups, especially with regard to special education students, and what steps are employed to attain successful groups that encourage academic learning and social skills training?

Ysseldyke, Thurlow, Christenson & McVicar (1988) examined educable mentally handicapped children in both mainstreamed and self-contained settings and found that these students received the most instructional time in entire group settings as compared to other students. Putnam, Rynders, Johnson & Johnson (1989) studied 16 students whose IQ's ranged from 35 to 52 and tested the effects of collaborative skill instruction training in cooperative learning groups. The instructor identified a skill to be practiced, checked the students understanding, and had students perform the skills during an academic cooperative learning activity. Examples of skills taught were sharing materials and ideas, encouraging everyone to participate, saying at least one nice thing to another, and checking to see if everyone understood and agreed with the answers. The results revealed that students receiving collaborative skill instruction interacted more positively with one another than those who did not receive the training. Therefore, it is surmised that teaching cooperative learning instruction to handicapped children will promote greater social and academic interaction.

Cooperative learning is seen as an effective strategy for improving academic achievement (O'Connor & Jenkins,

1993; Schwenn & Goor, 1992; and Slavin, 1983), puts the responsibility on the learner (Augustine, Gruber, & Hanson, 1990), helps the student prepare for today's society, advances English language skills (Mergendoller & Packer, 1989), and provides a more supportive learning environment for struggling students (O'Connor & Jenkins, 1993).

Schniedewind & Salend (1987) and O'Connor & Jenkins (1993) feel cooperative learning is worthwhile for heterogeneous student populations because it encourages liking and learning among students of various abilities, handicapping conditions, and racial and ethnic backgrounds.

Johnson & Johnson (1989) state that social skills training for both special education students and their non-handicapped peers will promote positive groups and cooperative learning takes leadership, decision making, communication, trust-building, and conflict resolution skills. However, many researchers, such as Schniedewind & Salend (1987) and Tateyma-Sniezek (1990), state that research on cooperative learning grouping with special education students has been limited and more research is needed to decide if cooperative learning is worthwhile.

Schniedewind & Salend (1987) presented special educators with practical guidelines for designing and implementing cooperative learning strategies in the mainstream, resource, and self-contained classrooms.

Schniedewind & Salend suggest that the educator select a format for cooperative learning. The following is a list

of cooperative learning strategies that may be utilized in the classroom:

PEER TUTORING:

Peer tutoring involves one student teaching a new skill to one or several classmates. Schwenn & Goor (1992) suggest using a strategy card as illustrated in Table 2.

Schwenn & Goor (1992), reported that students using the peer coaching method, in cooperative learning groups, showed improved participation and were more likely to understand the activity. Schniedewind & Salend (1987) suggest that students should alternate so all students get a chance to participate in peer coaching. The authors pose that students who are not capable of teaching an academic skill may teach a non-academic skill such as a favorite hobby or interest.

GROUP PROJECT FORMAT/LEARNING TOGETHER: (Developed by Johnson & Johnson)

Students combine their knowledge into one project or assignment. They may be rewarded with praise, grades, or tokens for group performance (Mergendoller & Packer, 1989).

JIGSAW: (Developed by Aronson)

Each group member is assigned a task that must be completed in order for the group to reach its goal. Students will learn from one another (Mergendoller & Packer,

Table 2

Sample Strategy Card for Peer Tutoring

When I am in a group activity, I can coach others.

1. Before beginning, I ask myself:
Do I understand the directions and goal of the group activity?
2. If I do not understand the directions or goal of the activity, I ask the other group members. If they do not know, I ask the teacher.
3. I state the directions and the goal for the group.
4. I ask, "Does everyone understand the goal of the activity?"
5. During the activity, I ask myself, "Are the group members paying attention?" If not, I signal them to attend.
6. I encourage others to participate in the discussion or group work by asking for their input or opinion.
7. At the end of the activity, I restate the group goal and ask, "Did our group achieve the goal?"
8. Then I ask the group members, "What did you learn?"

Note. From "Three Strategies that Enhance Participation in Cooperative Learning Activities for Students with Learning Disabilities," by J. Schwenn & M. Goor, 1992, Paper presented at the Annual Meeting of the Council of Exceptional Children, Baltimore, MD, p. 6.

1989).

Schniedewind & Salend (1987) state that instructors who utilize the jigsaw method can modify each individual's assignment so each group member can succeed, especially the handicapped student.

Team-Games-Tournament: (Developed by Robert Slavin)

Students help each other to learn the material, but instead of individualized tests, they compete against similar-ability students from other teams in "tournaments" to earn points for their team (Mergendoller & Packer, 1989).

Group Investigation: (Created by Sharan & Sharan)

Each group is assigned a different project that will be presented in other groups (Mergendoller & Packer, 1989).

Teachers may choose one or utilize a variety of the formats in the classroom, but it should depend on the students' unique needs and characteristics and the teacher's experience in cooperative learning groups (Schniedewind & Salend, 1987).

Guidelines for working cooperatively must be established for the classroom and posted. O'Connor & Jenkins (1993) observed twelve 3rd through 6th grade special education students in cooperative learning groups and found that in many instances teachers and teaching assistants would "join a group" and answer for the student; thus the

student became passive and would not participate. They suggest that teachers should avoid the temptation of answering students' questions when peers could help and offer guidelines for teachers to employ effective classroom groups. Teachers should write and state the directions and the goals. Then they should explain to the groups, "You will know when you are finished with the activity when you...". Teachers should encourage peers to redirect the questions to others in their group. At the end of the activity, students are encouraged to evaluate themselves and other group members. Finally, the groups should be given the opportunity to share their results.

Johnson & Johnson (1989) state that students need to feel that their work benefits the group and all group members need to encourage support and assist one another for successful cooperative learning to take place.

Teachers should form heterogeneous cooperative learning groups by creating a sociogram for each class. A sociogram is a technique for observing how others work together and assess student's preferences for social relationships by asking students with whom they would prefer to work (Cartwright & Cartwright, 1974, in Salend, 1994). When conducting sociograms, educators should always try to pair the lower academically, less popular students with whom they want to work and those who want to work with them.

Schniedewind & Salend (1987) suggest teachers start with

groups of three and increase the size to no more than five, so students become used to cooperative learning.

Johnson & Johnson (1987) explain that when placing special education students in cooperative learning groups with non-handicapped peers, several problems may arise including; the handicapped students feeling fearful and anxious, the non-handicapped students concern about their grades being affected, and the special education students passive uninvolved. The researchers recommend that special education students should be given a structured role so they understand their responsibilities and be trained in certain academic and social skills necessary to work with one another. The non-handicapped peer should also be trained to help, tutor, teach, and share skills with the special education student. The teacher should also make reasonable academic requirements for handicapped children and give bonus points for working appropriately, together. For passive students, they suggest using the jigsaw method so all students have a specific job to complete.

Mergendoller & Packer (1989) propose that any group learning technique overcomes the obstacles of interaction and friendship between academically handicapped and normal functioning students.

Teachers need to arrange the classroom by arranging the tables or desks in clusters and provide each group with an area where they can store in-process projects and other necessary materials.

Educators should develop cooperative skills since cooperative learning may be new to many handicapped students. So students can reflect on their experience, teachers are encouraged to ask students several questions after each project/assignment such as; What did group members do to help the group reach its goal? What didn't group members do that prevented the group from reaching its goal? What will the group do next time to work more effectively?

Teachers should also provide opportunities for students to practice specific skills. Schwenn & Goor (1992) developed a strategy for teaching specific learning strategies in cooperative learning groups. In this self-monitoring approach, students learn to monitor their own participation in group activities with the assistance of instructions on a preprinted 3 x 5 index card (see Table 3).

In addition, since handicapped peers will be the victim of much teasing and ridicule, teachers should instruct the class on how to appropriately respond to such "put-downs".

Teachers may also want to assign each member of a group a specific role such as a coordinator, recorder checker, and praise-giver.

Finally, teachers must decide how they want to evaluate the cooperative learning groups. Schniedewind & Salend (1987) indicate that in order to promote peer support and group accountability, students should be evaluated as a group, and how each student's individual learning will

Table 3

Example of Self-Monitoring Approach using a 3 x 5 Index Card

When I am in a group activity, I work with group members to discuss information, solve a problem, or work on a project.

I am a valuable member of the group.

1. Before beginning, I ask myself:
Do I understand the directions and goal of the activity?
 2. If I didn't understand the directions or goal of the activity, I ask the group members. If they don't know, I ask the teacher to explain the directions or goal again.
 3. Every few minutes, I ask myself:
Am I listening to the group members?
Am I helping in some way to complete the activity?
 4. At the end of the activity state what I learned.
-

Note. From "Three Strategies that Enhance Participation in Cooperative Learning Activities for Students with Learning Disabilities," by J. Schwenn & M. Goor, 1992, Paper presented at the Annual Meeting of the Council of Exceptional Children, Baltimore, MD, p. 6.

affect the group's evaluation. Another method is "contract grading" where the group will be graded for the amount of work for which they take responsibility. Teachers can then average each student's grade to arrive at one group grade.

It is my opinion that successful cooperative learning groups require much time and energy from both the teachers and students. Problems will occur from time to time and effective strategies that were suggested may alleviate some of the complications. However, practice and experience in engaging in cooperative learning can effectively help achieve successful groups, but educators must be patient and must be willing to take the time to set-up groups for the positive experience. Furthermore, cooperative learning groups offer so much variety and flexibility that teachers can adapt methods to assist handicapped children. Another important aspect is that if something does not work, it can be modified or a new cooperative learning format can be utilized almost immediately to correct the problem. Taking the first step to promoting cooperative learning groups in the classroom is the hardest. Many teachers and students, who do not like change and are "set in their ways", are adamant against new adjustments and fear failure. Perhaps, more inservice classes, to teach specific strategies to incorporate cooperative learning in the classroom and team-teaching, will promote small group instruction for greater academic and social functioning.

METHODOLOGY

Dansereau's MURDER strategy was conducted over a period of five school days. To minimize the issue of administering this project at different times of the day, (i.e. before and after lunch) where students may be affected, this researcher decided to deliver the strategy in the morning from 7:35 to 8:25 a.m., over a period of ten school days. Nineteen special education tenth grade students, either classified as specific learning disabled or emotionally handicapped, participated in the teaching strategy in Martin County, Florida.

Participants

Group A, the students who were engaged in the teaching strategy, participated in the experiment the first five days, and group B, the students who did not participate in the experiment, were given direct instruction methods to learn the material presented. Consequently, all students participating, were enrolled in either of the two English Skills II Exceptional Student Education classes. The nineteen students completed the same pretest, composed of matching prefix and suffix roots to their meanings (see appendix A).

Following the pretest, the two classes were randomly divided into two groups. This was done to avoid the bias of one group doing better than the other because of the time of day or familiarity with classmates.

Procedures

Based on research presented in the previous section, the guidelines presented by Schniedewind and Salend (1987) were followed based on the needs of the special education students. The researcher selected the Group Project Format/Learning Together strategy. Since the group would participate in a game later in the project, a modified version of Teams-Games-Tournament was further selected.

Rules were then established that would best fit the classroom and were posted on the wall in the classroom along with a handout for each group. Before the cooperative learning groups were established, the rules and guidelines were reviewed by group A students. The following is the list of rules and guidelines presented:

1. Each member will be assigned a job that he/she must fulfill.
2. Each group will know he/she have completed the activity when each group member has completed their job.
3. Before a member of the group asks the teacher for assistance, ask all other group members first.
4. At the end of each activity, students must fill out an evaluation form (see appendix B).

The cooperative learning groups were then formed. The classroom was set up with desks in clusters of three and all material was stored in a cabinet. To protect the experiment from any teacher biases of grouping students, groups were

selected randomly and the same groups were used during the entire five day process.

For each assignment, each group member took turns performing a job of either 1. reader, 2. recorder, and 3. editor. The reader narrated the directions and handouts, the recorder wrote all the answers, and the editor checked all the work before it was handed in. All three group members were responsible for comprehending and answering the material.

Following each assignment, each group member filled out an evaluation sheet so the students could reflect on the experience and be responsible for evaluating themselves and their group members.

The following five-day schedule was designed for group one utilizing Dansereau's MURDER model and cooperative learning:

Day 1: Setting the mood to study and learn.

- A. Present a list of prefixes and suffixes to each group.
- B. Game of Concentration. The cards have been prepared prior to the lesson by using 3 x 5 index cards and writing the prefix or suffix on one side of the card and its definition on another card. The cards were then shuffled and then arranged spread out face down. Each student in the group took turns turning two

cards over until a match was made.

- C. Each group member completed the evaluation sheet independently when all the jobs were finished and the assignment was handed in.

Day 2: Reading for understanding.

- A. In each group, the reader recounted the selection on prefixes and suffixes (see appendix c).
- B. Each group completed assigned worksheets pertaining to the reading selection (see appendix d).
- C. Each group member completed the evaluation sheet independently when all the jobs were completed and the assignment was handed in.

Day 3: Recalling information.

- A. Each group prepared a crossword using words containing prefixes and suffixes.
- B. Each group member completed the evaluation sheet independently when all the jobs were finished and the assignment was handed in.

Day 4: Digesting information.

- A. Each group participated in the Root Word Game. The game was designed as a race in which group could match prefix and suffix roots to

appropriate root words, and define the entire word.

- B. Each group member completed the evaluation sheet independently when all the jobs were finished and the game ended.

Day 5: Expanding knowledge.

- A. The words made from the game conducted on day four were used to create a story in each group.
- B. When finished, the group members studied to prepare for the posttest.
- C. The posttest was given independently to each student.
- D. Final evaluation forms were filled out.

The following five days contained lessons of what group B completed using individualized workbook assignments (see appendix d).

Day 1: Each student was given the list of prefixes and suffixes. The reading selection was read out loud and then students worked independently to complete the worksheets.

Day 2: Students independently completed worksheets.

Day 3: Grammar book exercises were completed.

Day 4: Grammar book exercises were completed.

Day 5: Teacher reviewed the assignments with the class and students independently took the posttest.

During the teaching strategy, the researcher observed what O'Connor & Jenkins, 1993; Schwenn & Goor, 1992; and Johnson & Johnson, 1989, indicated about cooperative learning. The students who participated in the strategy were more focused in the activities and there was less disruption among students. The students who did not engage in Dansereau's strategy, were uninvolved and less stimulated in what they were doing. In addition, the researcher felt more was accomplished during the strategy and since the activities were more student-driven, less direct teacher instruction was needed.

RESULTS

The subjects' scores on the pretest and posttest are presented in Table 4 for both groups. Initially, the data was explored through the use of a Person product moment correlation matrix using the posttest scores and participation in the strategy (1=participation and 0=non-participation). However, there was no significant correlation ($r=0.1006$) between posttest scores and participation in the study.

To test the study's hypothesis that predicted the MURDER strategy would have an effect on post test performance, a t test was used. These results are shown in Table 5. Students who used the strategy scored higher ($X=24.889$) than those who did not ($X=23.667$). This difference however, was not significant ($t=.4046$, degrees of freedom= 15) with $P=.05$.

In addition, students who used the strategy averaged higher (+14.22) between the pretest and posttest scores than those who did not.

Although the results from this study indicated that there was virtually no correlation between participation in the strategy and posttest scores, the researcher still thinks the finding that Group A scored higher between pretest and posttest is significant because it proves that the MURDER strategy must have had some effect on why Group A scored higher than Group B taking into consideration that

several biases were eliminated that could alter the experiment mentioned in the previous section.

Table 4

Pretest and Posttest Scores (out of a possible 40 points).

<u>Group A</u>		<u>Group B</u>	
Pretest	Posttest	Pretest	Posttest
21	28	15	23
11	26	14	21
17	37	14	25
8	35	6	32
3	17	10	25
8	25	13	17
13	18	21	29
3	15	4	18
12	23	6	23
<hr/>		<hr/>	
X=10.67	X=24.89	X=11.4	X=23.67
Increase is +14.22		Increase is +12.27	

Table 5

T test results

	<u>Group A</u>	<u>Group B</u>
N:	9	9
Mean:	24.889	23.667
Standard Deviation:	7.672	4.821

t= .4046

Degrees of Freedom=15

CONCLUSION

Although the results of the Pearson product-moment correlation indicated that there was no association between the posttest scores and the type of teaching method used, several factors may be the cause of the low correlation. The number of subjects in each group was very low with nine students in one group and nine students in the other. Since the average posttest score was slightly higher with the group who participated in the strategy, perhaps a larger number of subjects would impact on a greater correlation between teaching method and a posttest score. In addition, many students were absent during varying aspects of the study and missed a significant amount of the material presented; thus this factor may have lowered their score on the posttest. It is also important to note that the students' relationship with the researcher may have affected their attitude upon completing the assignments in a serious manner. Since this experiment was conducted in the spring, all the students were comfortable with their teacher and may not perform to their best expectation than they might with a stranger. However, one might consider that the students could perform poorly in front of a stranger, which might be another factor in the lower test scores. The researcher was cautious to chose the exact time of day the study was conducted and additionally randomly selected students from both English classes.

Several positive effects on students who participated in the teaching strategy were observed. Students were more engaged and on-task during the lessons than they have been in the past. There were fewer disruptions during class and the students appeared more involved and stimulated in the activities. Students who participated in the teaching strategy further utilized their communication skills at greater length, took more risks when answering particular questions, and questioned the material more frequently than did the group that was teacher directed.

Based on the findings noted above, the researcher recommends that more student-driven activities, such as the teaching strategy described during this project, be utilized throughout the curriculum at every grade level. It appears that students become more involved in assignments and there may be less interruptions during class. It is proposed that more research be done on student-driven teaching strategies that involve cooperative learning with a larger number of subjects to investigate the relationship between teaching method and posttest scores.

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APPENDIX A
PRETEST AND POSTTEST

Name _____

Part I Matching Prefixes

- | | | |
|-----------|-----------------------------|----------------|
| _____ 1. | a-, as in atypical | A. after |
| _____ 2. | anti-, as in antisocial | B. under |
| _____ 3. | bi-, as in bicycle | C. not |
| _____ 4. | dis-, as in disinterested | D. across |
| _____ 5. | ex-, as in exterior | E. before |
| _____ 6. | fore-, as in forewarn | F. wrong |
| _____ 7. | il-, as in illegal | G. against |
| _____ 8. | im-, as in improper | H. two |
| _____ 9. | in-, as in include | I. back, again |
| _____ 10. | mal- as in maladjusted | J. one |
| _____ 11. | mis-, as in misspell | K. out |
| _____ 12. | mono-, as in monorail | L. not |
| _____ 13. | non-, as in nonsmoker | M. not |
| _____ 14. | post-, as in posttest | N. inside |
| _____ 15. | pre-, as in prehistoric | O. before |
| _____ 16. | re-, as in replace | P. not |
| _____ 17. | semi-, as in semiconscious | Q. bad, badly |
| _____ 18. | sub-, as in submarine | R. not |
| _____ 19. | trans-, as in transatlantic | S. half/partly |
| _____ 20. | un-, as in undesirable | T. not |

Part II Matching Suffixes

- | | | |
|-----------|--------------------------|---------------------|
| _____ 1. | -able, as in capable | A. one who |
| _____ 2. | -ate, as in captivate | B. in direction of |
| _____ 3. | -en, as in strengthen | C. full of |
| _____ 4. | -er, as in teacher | D. more than one |
| _____ 5. | -ful, as in beautiful | E. condition of |
| _____ 6. | -hood, as in childhood | F. able to be |
| _____ 7. | -ing, as in skating | G. to make, made of |
| _____ 8. | -ish, as in sluggish | H. like |
| _____ 9. | -ist, as in artist | I. cause to be |
| _____ 10. | -ize, as in sanitize | J. free from |
| _____ 11. | -less, as in childless | K. cause to become |
| _____ 12. | -like, as in childlike | L. one who does |
| _____ 13. | -ly, as in motherly | M. full of |
| _____ 14. | -ment, as in fulfillment | N. action, process |
| _____ 15. | -ness, as in happiness | O. somewhat like |
| _____ 16. | -or, actor | P. one who |
| _____ 17. | -ous, as in famous | Q. manner or nature |
| _____ 18. | -s, as in cars | R. condition, state |
| _____ 19. | -ward, as in westward | S. result, action |
| _____ 20. | -y, as in funny | T. like, full of |

Part I Matching Prefixes

- | | | | |
|-----------|-----------------------------|----|-------------|
| _____ 1. | un-, as in undesirable | A. | half/partly |
| _____ 2. | trans-, as in transatlantic | B. | after |
| _____ 3. | sub-, as in submarine | C. | before |
| _____ 4. | semi-, as in semiconscious | D. | not |
| _____ 5. | re-, as in replace | E. | across |
| _____ 6. | pre-, as in prehistoric | F. | out |
| _____ 7. | post-, as in posttest | G. | under |
| _____ 8. | non-, as in nonsmoker | H. | two |
| _____ 9. | mono-, as in monorail | I. | bad, badly |
| _____ 10. | mis-, as in misspell | J. | one |
| _____ 11. | mal-, as in maladjusted | K. | not |
| _____ 12. | in-, as in include | L. | before |
| _____ 13. | im-, as in improper | M. | not |
| _____ 14. | il-, as in illegal | N. | wrong |
| _____ 15. | fore-, as in forewarn | O. | not |
| _____ 16. | ex-, as in exterior | P. | against |
| _____ 17. | dis-, as in disinterested | Q. | back, again |
| _____ 18. | bi-, as in bicycle | R. | not |
| _____ 19. | anti-, as in antisocial | S. | inside |
| _____ 20. | a-, as in atypical | T. | not |

Part II Matching Suffixes

- | | | | |
|-----------|--------------------------|----|------------------|
| _____ 1. | -y, as in funny | A. | like |
| _____ 2. | -ward, as in westward | B. | full of |
| _____ 3. | -s, as in cars | C. | one who |
| _____ 4. | -ous, as in famous | D. | manner or nature |
| _____ 5. | -or, as in actor | E. | free from |
| _____ 6. | -ness, as in happiness | F. | in direction of |
| _____ 7. | -ment, as in fulfillment | G. | action, process |
| _____ 8. | -ly, as in motherly | H. | cause to be |
| _____ 9. | -like, as in childlike | I. | one who |
| _____ 10. | -less, as in childless | J. | condition of |
| _____ 11. | -ize, as in sanitize | K. | somewhat like |
| _____ 12. | -ist, as in artist | L. | like, full of |
| _____ 13. | -ish, as in sluggish | M. | more than one |
| _____ 14. | -ing, as in skating | N. | to make, made of |
| _____ 15. | -hood, as in childhood | O. | result, action |
| _____ 16. | -ful, as in beautiful | P. | able to be |
| _____ 17. | -er, as in teacher | Q. | cause to become |
| _____ 18. | -en, as in strengthen | R. | one who does |
| _____ 19. | -ate, as in captivate | S. | full of |
| _____ 20. | -able, as in capable | T. | condition, state |

APPENDIX B
EVALUATION SHEET

EVALUATION SHEET

1. What did group members do to help the group reach its goal?

2. What didn't the group members do to help the group reach its goal?

3. What will be done differently next time?

4. What did you learn from this assignment?

5. Grade yourself and each member and explain why everyone earned the grades you gave.

APPENDIX C

PREFIXES AND SUFFIXES PRESENTED



Words—Their Parts and Pieces

When you were growing up, you heard many new words all the time. Learning these new words helped you to do a better job of making yourself understood. As you continue to come across new words—in reading and in conversation—you will want to understand these words and learn how to use them. Using techniques for learning new words will help you with your speaking and writing.

Word Parts



One of the first techniques that we learn is to break a word into smaller parts. The very smallest part or unit of a word that cannot be divided into independent or meaningful parts is called a *morpheme*. A *morpheme* can be a *real* word or a piece of a word. For example, in the word *going*, *go* is one morpheme and *-ing* is another. As you can see, *go* can be used alone; and while *-ing* cannot, it changes the meaning of the word *go* when joined to it. In contrast, the word *best* has no independent parts—*bes-* cannot be used alone, and neither can *-t*. Therefore, the word *best* is in itself a *morpheme*.

Prefixes and Suffixes

Any given word may have three parts—the original or *root word*, a *prefix*, or a *suffix*. A *prefix* is a letter or group of letters added to the *beginning* of a word to change its meaning. A *suffix* is a letter or group of letters added to the *end* of a word to change its meaning. Each prefix or suffix has its own meaning. For example, if you

Commonly Used Prefixes

Prefix	Meaning	Example	Prefix	Meaning	Example
<i>a-</i>	not	atypical	<i>mal-</i>	bad; badly	malform
<i>anti-</i>	against	antisocial	<i>mis-</i>	wrong	misplace
<i>bi-</i>	two or twice	bifocal	<i>mono-</i>	one	monorail
<i>dis-</i>	opposite of; not	disinterested	<i>non-</i>	not	nonsmoker
<i>ex-</i>	out	exterior	<i>post-</i>	after	posttest
<i>fore-</i>	before	forewarn	<i>pre-</i>	before	prefab
<i>il-</i>	not	illegal	<i>re-</i>	back; again	replace
<i>im-</i>	not	improper	<i>semi-</i>	half; partly	semiconscious
<i>in-</i>	inside or within; not	include	<i>sub-</i>	under	submarine
<i>inter-</i>	between	intercontinental	<i>trans-</i>	across	transatlantic
<i>intra-</i>	within	intrastate	<i>un-</i>	not; opposite of	unbelievable

add the prefix *un-* to a word, it means *not* plus the meaning of the root word. If you add the suffix *-ful* to a word, it adds *full of* to the *root word* meaning. Sometimes, both a prefix and a suffix are added to one root word. If you add the prefix *un-* (not) and the suffix *able* (able to be or do) to the root word *think*, you get the word *unthinkable*—*not able to be thought about*.

Prefixes and suffixes can be very useful clues to the meaning of words. Study the lists of commonly used prefixes and suffixes on the previous page and below.

Commonly Used Suffixes					
Suffix	Meaning	Example	Suffix	Meaning	Example
<i>-able</i>	able to be	trainable	<i>-less</i>	free from; without	worthless
<i>-ate</i>	cause to become	activate	<i>-like</i>	like	childlike
<i>-en</i>	to make; made of	strengthen	<i>-ly</i>	like in manner or nature	motherly
<i>-ence</i>	state or quality of	obedience	<i>-ment</i>	result; action	wonderment
<i>-er</i>	one who	teacher	<i>-ness</i>	condition of	happiness
<i>-ful</i>	full of	beautiful	<i>-or</i>	one who	actor
<i>-hood</i>	condition or state of	childhood	<i>-ous</i>	full of	famous
<i>-ing</i>	action or process	skating	<i>-s</i>	more than one	cars
<i>-ish</i>	somewhat like	sluggish	<i>-ship</i>	state of or condition of	internship
<i>-ist</i>	one who does or uses	artist	<i>-tion</i>	action or state	attention
<i>-ity</i>	quality	sanity	<i>-ward</i>	in the direction of	westward
<i>-ize</i>	cause to be	computerize	<i>-y</i>	like; full of	sunny

APPENDIX D

WORKSHEETS USED FOR GROUP B

determine the meaning of the **bold** word in each sentence below. Circle the letter of each correct choice.

Ex. "Anna is **displeased**" means that

- a. Anna is not pleased.
- ☒ b. Anna is sometimes pleased.

1. "Jody is **careful**" means that

- a. Jody takes a lot of care.
- b. Jody takes care of others.

2. "To **prepay**" means to

- a. pay in advance.
- b. pay afterwards.

3. "I-95 is an **interstate** road" means that

- a. it is only in one state.
- b. it goes between states.

4. "Susan **rechecked** her paper" means that

- a. Susan checked her paper again.
- b. Susan did not check her paper.

5. "Harold shows **kindness** to animals" means that

- a. Harold has land animals.
- b. Harold is kind to animals.

6. "You are **unemployed**" means that

- a. you are not employed.
- b. you are employed again.

7. "To be **faultless**" means

- a. to be without fault.
- b. to be full of fault.

8. "Mary's work is **inaccurate**" means that

- a. Mary's work is not accurate.
- b. Mary's work is always accurate.

9. "John's explanation is **illogical**" means that

- a. John's explanation is beyond the logical.
- b. John's explanation is not logical.

10. "Joan is a **scientist**" means that

- a. Joan studies science.
- b. Joan dislikes science.

sentence below. Then, choose the best definition for the **bold** word. Circle the letter of each correct choice.

1. John has the **authority** to sign all contracts.
 - a. policy
 - b. power
 - c. wealth
 - d. success
2. The other party guests wondered why Maria was being **unfriendly**.
 - a. friendly
 - b. antisocial
 - c. excited
 - d. violent
3. He wanted to **motorize** his bicycle.
 - a. put a model on
 - b. put a sticker on
 - c. put an engine on
 - d. put a trailer on
4. That statement is unfounded and totally **untrue**.
 - a. believable
 - b. impossible
 - c. not true
 - d. possible
5. Her **vitality** helped her to get that job.
 - a. attitude
 - b. experience
 - c. intelligence
 - d. energy
6. Man's first walk on the moon was a magnificent **occurrence**.
 - a. event
 - b. example
 - c. surprise
 - d. policy
7. Many people in this world are dying of **starvation**.
 - a. the results of starving
 - b. indulging in food
 - c. excess
 - d. indulging in excess
8. I like my salad in **wooden** bowls.
 - a. plastic container
 - b. without dressing
 - c. made of wood
 - d. glass

9. Construction must follow standards set by the state of Florida.

- a. samples
- b. dates
- c. requirements
- d. plans

10. The prefix **sub-** means:

- a. before
- b. after
- c. above
- d. below

11. Our investigation shows that **substandard** housing exists in this county.

- a. traditional
- b. cheap
- c. unacceptable
- d. excellent

12. The **acidity** of the orange juice made it taste bad.

- a. sweetness
- b. amount
- c. texture
- d. sourness

Identification

Directions:

Match the words with the definitions below. (Use the **prefix** meaning as a clue to the definition.) Write the correct word on the line in front of its definition, and circle the prefix.

atypical	bicycle	illegal
imperfect	interstate	misspelled
monorail	postgraduate	prehistoric
replace	submarine	transatlantic
undress	unknown	unnecessary

Ex. atypical not normal or common

- _____ 1. across the Atlantic Ocean
- _____ 2. that which is not known
- _____ 3. spelled wrong
- _____ 4. after graduation
- _____ 5. put back in place
- _____ 6. that which is not perfect
- _____ 7. vehicle with two narrow tires and foot pedals
- _____ 8. to take off clothing
- _____ 9. not allowed by law
- _____ 10. vehicle that rides on one rail
- _____ 11. between two or more states
- _____ 12. a ship that can travel under water
- _____ 13. not necessary
- _____ 14. before recorded history

Identification

Directions:

Match the words with the definitions below. (Use the **suffix** meaning as a clue to the definition.) Write the correct word on the line in front of its definition, and circle the suffix.

actor	breakable	cloudy
development	hairless	helpless
playful	rapidly	sickly
sightless	sightseeing	tourist
towering	volunteer	walker

Ex. cloudy full of clouds

- _____ 1. very tall
- _____ 2. one who volunteers
- _____ 3. one who acts
- _____ 4. full of play
- _____ 5. without hair
- _____ 6. to happen quickly
- _____ 7. houses or other buildings built on empty land
- _____ 8. not strong; not healthy
- _____ 9. not able to help oneself
- _____ 10. blind
- _____ 11. easy to break
- _____ 12. person traveling for pleasure
- _____ 13. going around to see objects or places of interest
- _____ 14. one who walks

Multiple Choice

Directions:

Choose the best **definition** for the **bold** word in each sentence below. Circle the letter of each correct choice.

1. Winning the football conference created a feeling of **accomplishment** for the team.
 - a. achievement
 - b. solution
 - c. association
 - d. resistance
2. The rent on the apartment must be **prepaid** before you are given the key.
 - a. paid monthly
 - b. paid in advance
 - c. paid by check
 - d. paid independently
3. Wood's contracts were **inaccurate**.
 - a. complicated
 - b. usually accurate
 - c. very accurate
 - d. not accurate
4. Reggie received an **intramuscular** injury during the last baseball game.
 - a. within the muscle
 - b. beneath the muscle
 - c. across the muscle
 - d. outside the muscle
5. The directions said to **moisturize** the cotton ball.
 - a. scorch
 - b. ink
 - c. alert
 - d. dampen
6. The postman had a physical checkup **annually**.
 - a. twice a year
 - b. every month
 - c. every year
 - d. every two years

7. John's track shoes are **matrimonial**.
- expensive
 - new looking
 - unattractive
 - bad smelling
8. The **transcontinental** cable was repaired last May.
- within the continent
 - across the continent
 - under the continent
 - between the continent
9. The **pregame** pep rally was held at 2:30 p.m. in the gym.
- against the game
 - during the game
 - after the game
 - before the game
10. The United States **exports** food to many countries.
- makes clear
 - sends out
 - tries out
 - joins together
11. The employees of the factory were **dismissed**.
- sent to work
 - sent away
 - sent for training
 - sent within
12. Many students wanted a paper published **bimonthly**.
- every two months
 - every two days
 - twice a month
 - three times a month
13. Nora enjoyed reading the **foreword** to the book.
- before the rest of the book
 - after the rest of the book
 - in the middle of the book
 - last chapter of the book
14. Stan thought his best friend's furniture was **mismatched**.
- perfectly matched
 - in need of repair
 - not matched
 - old

PRACTICE A

Copy each prefix below. Then write two words that contain the prefix. You may use a dictionary. Use one of the words in a written sentence of your own.

Example: semi-

semi-

semicircle

semiprivate

When Uncle Arthur was in the hospital, he had a semiprivate room.

- | | |
|-----------|-----------|
| 1. re- | 6. anti- |
| 2. inter- | 7. pro- |
| 3. im- | 8. ex- |
| 4. super- | 9. trans- |
| 5. sub- | 10. com- |

PRACTICE B

Combine each word below with the suffix that follows it, to make a new word. Then use the new word in a sentence of your own. If you are not sure of the spelling or meaning of the new word, check the dictionary.

Example: nation + al

national

The national anthem of the United States is "The Star-Spangled Banner."

1. sincere + ly
2. novel + ist
3. wonder + ful
4. like + able
5. lazy + ness
6. reck + less
7. carry + age
8. govern + ment
9. mystery + ous
10. free + dom

Try Your Skill Many of the words below have prefixes. Some do not. For each word that has a prefix, write the meaning of the prefix plus the base word. For example, for the word *retry* you would write: again + type.

- | | | |
|---------------|---------------|------------------|
| 1. misfit | 6. foreign | 11. nonactive |
| 2. interstate | 7. replay | 12. misfortune |
| 3. ready | 8. none | 13. extrasensory |
| 4. reschedule | 9. extralegal | 14. forerunner |
| 5. foresee | 10. miserable | 15. return |

Try Your Skill Number your paper from 1 to 16. Find the suffix in each word below. Then write the base word and the meaning of the suffix for each word. For example, for the word *sensible* you would write: sense + having this quality.

- | | |
|----------------|----------------|
| 1. driver | 9. glamorous |
| 2. deafness | 10. waiter |
| 3. useful | 11. gentleness |
| 4. famous | 12. returnable |
| 5. improvement | 13. director |
| 6. taxable | 14. doubtful |
| 7. operator | 15. studious |
| 8. thoughtless | 16. thankful |

D. Many of the words in the following list may be unfamiliar to you. However, you should be able to determine their meanings from what you have learned in this chapter. Use each word in a sentence that shows your understanding of the meaning of the word. Then check your use of the word with the dictionary definitions.

- | | | |
|----------------|-----------------|-------------------|
| 1. unabridged | 6. interpreter | 11. subterranean |
| 2. impractical | 7. pompous | 12. incompetence |
| 3. provocative | 8. malformation | 13. uninformative |
| 4. melodious | 9. maladjusted | 14. imprecise |
| 5. immobility | 10. prohibitive | 15. transaction |

A. Determine the meaning of the prefix in each word below. If necessary, refer to the list of prefixes on pages 2 and 3. Try to determine the meaning of each word by adding the meaning of the prefix to the meaning of the root.

- | | | |
|--------------------------|-------------------------|----------------------------|
| 1. <u>pre</u> plan | 6. <u>sub</u> marine | 11. <u>ben</u> ediction |
| 2. <u>extra</u> ordinary | 7. <u>non</u> poisonous | 12. <u>mis</u> calculate |
| 3. <u>pre</u> judge | 8. <u>extra</u> sensory | 13. <u>non</u> violent |
| 4. <u>mis</u> judge | 9. <u>intra</u> venous | 14. <u>pre</u> test |
| 5. <u>intra</u> muscular | 10. <u>mal</u> function | 15. <u>circum</u> navigate |

D. The prefixes in the following words all have more than one meaning. Decide which meaning of the prefix applies in each case. Then give the meaning of the word.

- | | | |
|-----------------|------------------|----------------|
| 1. retype | 6. unravel | 11. ingenious |
| 2. transoceanic | 7. proagreement | 12. superpower |
| 3. supersonic | 8. transcultural | 13. impatient |
| 4. unfasten | 9. restate | 14. inorganic |
| 5. pro-American | 10. disembark | 15. disregard |